## Remarks

The present Amendment is in response to the Official Action mailed on September 1, 2006. Claims 1, 12, 19 and 21 have been amended to be more clear and distinct. Claims 4, 9, 14-18, 20, 25 and 27 have been cancelled. New claims 28-30 have been added. Claims 1-3, 5-8, 10-13, 19, 21-24, 26 and 28-30 are presently pending. The Official Action rejected claims 1-3, 7-8, 10-11, 19, and 22-25 under 35 U.S.C. § 102(b) as assertedly being anticipated by the Katz U.S. Patent No. 6,403,397 ("Katz"). The Official Action also rejected claims 5, 6, 9, 2-13, 21 and 27 under 35 U.S.C. § 103(a) as assertedly being obvious over Katz in view of Klauk, H. et al., "High-Mobility Polymer Gate Dielectric Pentacene Thin Film Transistors", Journal of Applied Physics, Vol. 92, No. 9, pp. 5259-5263 (Nov. 1, 2002) ("Klauk"); and further in view of Mushrush, M. et al., "Easily Processable Phenylene-Thiophene-Based Organic Field-Effect Transistors and Solution-Fabricated Nonvolatile Transistor Memory Elements", Journal American Chemical Society, Vol. 125, No. 31, pp. 9414-9423 (2003) ("Mushrush"). The Official Action also rejected claim 26 under 35 U.S.C. § 103(a) as assertedly being obvious over Katz in view of Katz et al., "Synthesis, Solubility, and Field-Effect Mobility of Elongated and Oxa-Substituted αω-Dialkyl Thiophene Oligomers. Extension of "Polar Intermediate" Synthetic Strategy and Solution Deposition on Transistor Substrates", Chem. Mater. Vol. 10, pp. 633-638 (American Chemical Society 1998) ("Katz Article").

**The Rejection Under 35 U.S.C. § 102(b)**

Claims 1-3, 7-8, 10-11, 19, and 22-25 stand rejected under 35 U.S.C. § 102(b) as assertedly being anticipated by Katz. Applicants respectfully traverse this rejection and request that it now be withdrawn, in view of the discussion below.

The Independent Claims

Independent claims 1 and 19 have been amended to recite in part, "said dielectric layer being formed from a precursor composition including a member selected from the group consisting of: naphthalenes, styrenes, phenols, benzenes, and cresols...". The recitations previously included in these claims, stating a precursor composition "...having a refractive index of at least about 1.52...", have been deleted and are not relied upon to distinguish the asserted prior art. New independent claim 28 instead recites in part, "...said dielectric layer including a polyphenol, a polystyrene, a poly(4-vinylphenol-co-2-hydroxyethyl methacrylate), or a poly(phenoxyethyl methacrylate)..." Statements made in the Official Action specifically directed to the recitation "...having a refractive index of at least about 1.52..." accordingly are moot.

The Recitations Regarding The Precursor Compositions Cannot be Ignored

Applicants' recitations as to the precursor compositions for the dielectric layer, stated in the rejected independent claims 1 and 19, limit claims 1 and 19 as to both (A) structure ("...precursor composition including a member selected from the group consisting of:

naphthalenes, styrenes, phenols, benzenes, and cresols...") and (B) method of making ("...said dielectric layer being formed from a precursor composition...").

(A) The precursor compositions are ingredients, having thus-defined chemical structures, that are utilized for forming the dielectric layer. The aromatic classes of chemical structures of the recited precursors generally are not destroyed during polymerization. The Official Action makes the legally incorrect assertion that "...'dielectric layer being formed from a precursor composition' is method recitations in a device claimed, and they are non-limiting, because only the final product is relevant, not the method of making." Official Action, p. 2. The Official Action ignores the following statement in Manual of Patent Examining Procedure ("MPEP") section 2113, other parts of the same MPEP section being cited by the Official Action at pages 2-3 in attempting to support its legally incorrect statement of the law:

> "The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product. See, e.g., *In re Garnero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979) (holding "interbonded by interfusion" to limit structure of the claimed composite and noting that terms such as "welded," "intermixed," "ground in place," "press fitted," and "etched" are capable of construction as structural limitations.)"

The claim recitations defining the chemical classes of aromatic precursor compositions for the dielectric layer are structural limitations, which cannot be ignored. Given Applicants' teaching to provide a dielectric layer having exposed aromatic groups, the manufacturing process steps of forming the dielectric layer utilizing Applicants' recited chemical classes of aromatic precursor compositions "...would be expected to impart distinctive structural characteristics to the final product."

(B) Separately and in addition, as to the "method of making" aspects of Applicants claims, the above passage of the MPEP instructs that "As a matter of law, the structure implied by the method of making should be considered when assessing the patentability of product-by-process claims over the prior art." The Official Action has expressly dismissed the instructions in MPEP section 2113 regarding such consideration..

Katz does not teach the features that the Official Action asserts are taught by Katz regarding polyimides in any part of Katz to which the Official Action has Pointed.

Katz does not teach, in any part pointed to by the Official Action, the use of an aromatic polyimide. The assertion by the Official Action at page 2 that "polyimide is aromatic polymer" is an incorrect statement, because polyimides can be either aromatic or non-aromatic. The chemical term "imide" merely denotes the divalent radical –CONRCO-, which can be included in both aromatic and non-aromatic polymers. Katz merely teaches, in the disclosure at col. 3, lines 15-17 pointed to by the Official Action, that: "Suitable dielectric materials include silicon oxide, spin-on glass, and liquid-phase processable polymeric materials such as polyimides and poly(methacrylates)." Katz there states simply "polyimides". Katz fails to disclose or suggest in any part pointed to by the Official Action that an aromatic polyimide or any other aromatic material be selected as the dielectric layer. As an example, the "poly(methacrylates)", mentioned together with "polyimides" by Katz as desirable dielectric materials, are not indicated in any part of Katz to which the Official Action points as being aromatic, either. The chemical structure of methyl methacrylate is $H_2C=CHCO-OCH_3$, which is not aromatic. Polymerization of methyl

methacrylate yields poly(methyl 2-methylpropenoate), also known as polymethyl methacrylate ("PMMA"). PMMA is an example of a "poly(methacrylate)" that is not aromatic.

The Official Action purports at page 8 to cite paragraph #28 of Nakai U.S. Published Patent Application No. 2003/0173599 in support of its factually incorrect assertion that all polyimides are aromatic. Nakai paragraph 28 does not state that "all polyimides are aromatic". The Official Action's assertion that all polyimides are aromatic simply is factually incorrect. Nakai's statement at paragraph #28, pointed to by the Official Action, does not change the fact that some polyimides are aromatic and some polyimides are not aromatic.

Katz does not, in any part pointed to by the Official Action, teach to provide: a dielectric layer including an "aromatic" polyimide"; a dielectric layer including a surface selected to have "exposed aromatic groups"; or either (1) a precursor composition for forming a dielectric layer including a member selected from the group consisting of: naphthalenes, styrenes, phenols, benzenes, and cresols; or (2) a dielectric layer including a polyphenol, a polystyrene, a poly(4-vinylphenol-co-2-hydroxyethyl methacrylate), or a poly(phenoxyethyl methacrylate).

Therefore Katz, as applied in the Office Action, fails to disclose and fails to suggest independent claim 1 or independent claim 19. Claims 2, 3, 7-8, 10-11 and 22-25 all depend directly or indirectly from claim 1.

**The Rejection of Claims 5, 6, 9, 2-13, 21 and 27 Under 35 U.S.C. § 103(a)**

Claims 5, 6, 9, 2-13, 21 and 27 stand rejected under 35 U.S.C. § 103(a) as assertedly being obvious over Katz in view of Klauk and Mushrush. Claims 4, 9 and 27 have been cancelled. Each of the other rejected claims depends directly or indirectly from claim 1 or claim

19, discussed above. Therefore, each of these claims is unobvious and not anticipated for the same reasons discussed above. Applicants respectfully traverse this rejection and request that it now be withdrawn, in view of the above discussion of Katz deemed repeated here.

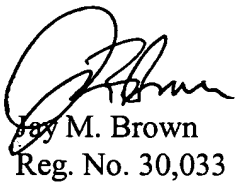
**The Rejection of Claim 26 Under 35 U.S.C. § 103(a)**

Claim 26 stands rejected under 35 U.S.C. § 103(a) as assertedly being obvious over Katz in view of the Katz Article. Claim 26 depends from claim 1. Therefore, claim 26 is unobvious and not anticipated for the same reasons discussed above. Applicants respectfully traverse this rejection and request that it now be withdrawn, in view of the above discussion of Katz deemed repeated here.

**Conclusion**

Since all of the pending claims, as amended, are not anticipated by and are unobvious over the cited references, Applicants believe that this application is now in order for allowance. The Examiner is respectfully requested and invited to contact the undersigned by telephone in order to resolve any remaining issues.

Respectfully submitted,



Jay M. Brown
Reg. No. 30,033
The Eclipse Group LLP
5003 Southpark Drive, Suite 260
Durham, NC 27713
(Tel): (919) 313-6161

Customer No.: 51029